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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/614,624	07/05/2003	Jeffrey W. Stevens	3003.001	7850

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EXAMINER
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VERBITSKY, GAIL KAPLAN

ART UNIT	PAPER NUMBER
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2859

DATE MAILED: 09/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/614,624	<b>Applicant(s)</b> STEVENS ET AL.	
	<b>Examiner</b> Gail Verbitsky	<b>Art Unit</b> 2859	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-29 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>07/05/03</u> | 6) <input type="checkbox"/> Other: ____  |

**DETAILED ACTION DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 12-13, 17-18, 20, 22, 25, 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rothfuss et al. (U.S. 6917891) in view of Boldt (U.S. 5723847).

Rothfuss discloses in Fig. 1 a device/ method for determining time remaining for fluid flow (until shut down) in a direction (inlet/ outlet) through a pipe, the device comprising a sensor (outlet sensor) 122 and a sensor (inlet sensor) 120 for sensing a parameter of the fluid; means (controller) for comparing data of the two sensors in a communication (link/ hardwire) with the sensors, and issuing an indication of a time remaining based upon the comparison and a warning signal.

Rothfuss teaches all the subject matter claimed by applicant, however, Rothfuss does not explicitly states that the parameter is temperature and, thus, the sensors are the temperature sensors, as stated in claims 1, 17, with the remaining limitations of claims 1, 12-13, 17-18, 20, 22, 25, 29.

Boldt discloses a device in the field of applicant's endeavor wherein the fluid/ water parameter is temperature, and at least one temperature sensor is a temperature sensor, and the temperature data is used for determining and displaying a remaining time for fluid flow (until shut down).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device, disclosed by Rothfuss, so as to determine the remaining time based on the data from the temperature sensors, as taught by Boldt, since both the sensors of Rothfuss and the sensors of Boldt could be used to determine the remaining time, if one is replaced with another, and because Rothfuss suggests that any fluid parameter could be measured, thus, Rothfuss does not teach away from using temperature sensors.

3. Claims 2-3, 7, 12-14, 19, 21, 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rothfuss and Boldt as applied to claims 1, 12-13, 17-18, 20, 22, 25, 29 above, and further in view of Smith (U.S. 4471354).

Rothfuss and Boldt disclose the device/ method as stated above.

They do not teach the limitations of claims 2-3, 7, 12-14, 19, 21, 23.

Smith discloses a device for remotely measuring temperature by using RF transmitter (wireless/ RF communication link) comprising a housing, inherently, for protection from an environment, a display, a power supply, as shown in Figs. 1-2.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device, disclosed by Rothfuss and Boldt, so as to have first or second sensor in a housing, power supply and a display, and capable to wirelessly transmit temperature data by RF to a host device, as taught by Smith, so as to allow the operator to both, obtain a visual data when the operator in the vicinity of the device, and when the operator is not in the premises, so as to continuously provide the operator with temperature data.

4. Claims 6, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rothfuss and Boldt as applied to claims 1, 12-13, 17-18, 20, 22, 25, 29 above, and further in view of Giardina (U.S. 4773023).

Rothfuss and Boldt disclose the device/ method as stated above.

They do not teach the limitations of claims 6, 10.

Giardina discloses in Fig. 1 a device in the field of applicant's endeavor comprising two temperature sensors located in upstream (fluid source) and downstream (outlet). The sensors can be thermocouples.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the sensors of Rothfuss and Boldt with temperature sensors, such as thermocouples, as taught by Giardina, because thermocouples are known to measure flowing fluid parameters and will perform the same function of measuring flowing fluid parameters if the sensors of are replaced with the thermocouples.

5. Claims 4, 6, 8, 10, 16, 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rothfuss and Boldt as applied to claims 1, 12-13, 17-18, 20, 22, 25, 29 above, and further in view of Giardina (U.S. 4773023) and Huang (U.S. 5535779).

Rothfuss and Boldt disclose the device/ method as stated above.

They do not teach the limitations of claims 4, 6, 8, 10, 16, 27-28.

Giardina discloses in Fig. 1 a device in the field of applicant's endeavor comprising two temperature sensors located in upstream (fluid source) and downstream (outlet). The sensors (first and second) can be thermocouples. Also, Giardina teaches

that a communication link is a hardwire communication link, as shown in Fig. 1. The controller is a microprocessor 22, which compared (determines the difference between) the two thermocouples and issues a power signal corresponding to the difference (col. 1, lines 44-60). The device also comprises an alarm signal. In addition, Giardina measures a rate of change in temperature.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the sensors of Rothfuss and Boldt with temperature sensors, such as thermocouples, as taught by Giardina, because thermocouples are known to measure flowing fluid parameters and will perform the same function of measuring flowing fluid parameters if the sensors of are replaced with the thermocouples.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication link, disclosed by Rothfuss and Boldt with the hardwire communication link, as taught by Giardina, because both of these communication links are alternate types of the communication links, and will perform the same function, of transmitting thermally responsive data to a host, as very well known in the art, if one is replaced with the other.

Huang teaches that an alarm in a water outlet can be an audio alarm.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the alarm, disclosed by Rothfuss and Boldt, so as to have an audio alarm, as taught by Huang, so as to draw the operator's attention when the operator does not look directly at the device.

6. Claim 15, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rothfuss and Boldt as applied to claims 1, 12-13, 17-18, 20, 22, 25, 29 above, and further in view of Grimes et al. (U.S. 6639402).

Rothfuss and Boldt disclose the device/ method as stated above.

They do not teach the audio display.

Grimes teaches that a display can be an audio display.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the display, disclosed by Rothfuss and Boldt, so as to have an audio display, as taught by Grimes, so as to draw the operator's attention when the operator does not look directly at the display.

7. Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rothfuss and Boldt as applied to claims 1, 12-13, 17-18, 20, 22, 25, 29 above, and further in view of Immel (U.S. 6595005).

Rothfuss and Boldt disclose the device/ method stated above.

They do not teach that the temperature sensor (first) is an IC temperature sensor.

Immel teaches that parameter (temperature) of a flowing fluid could be obtained by integrated temperature sensor, thermocouple, etc.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the first temperature sensor of Rothfuss and Boldt with a temperature sensor, such as a thermocouple, as taught by Immel, because thermocouples are also known to measure flowing fluid parameters and will perform the

same function of measuring flowing fluid parameters if the (first) sensor of Rothfuss and Boldt is replaced with the thermocouple.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the first temperature sensor of Rothfuss and Boldt with a temperature sensor, such as integrated circuit temperature sensor, as taught by Immel, because integrated circuit sensors are also known to measure flowing fluid parameters and will perform the same function of measuring flowing fluid parameters if the (first) sensor of Rothfuss and Boldt is replaced with the integrated circuit temperature sensor.

8. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rothfuss and Boldt as applied to claims 1, 12-13, 17-18, 20, 22, 25, 29 above, and further in view of Immel (U.S. 6595005).

Rothfuss and Boldt disclose the device/ method stated above.

They do not teach that the temperature sensor (second) is an IC temperature sensor.

Immel teaches that parameter (temperature) of a flowing fluid could be obtained by integrated temperature sensor, thermocouple, etc.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the first temperature sensor of Rothfuss and Boldt with a temperature sensor, such as a thermocouple, as taught by Immel, because thermocouples are also known to measure flowing fluid parameters and will perform the



Art Unit: 2859

same function of measuring flowing fluid parameters if the (second) sensor of Rothfuss and Boldt is replaced with the thermocouple.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the second temperature sensor of Rothfuss and Boldt with a temperature sensor, such as integrated circuit temperature sensor, as taught by Immel, because integrated circuit temperature sensors are also known to measure flowing fluid parameters and will perform the same function of measuring flowing fluid parameters if the (second) sensor of Rothfuss and Boldt are replaced with the integrated circuit temperature sensor.

9. Claims 2-3, 7, 11, 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rothfuss and Boldt (U.S. 5723847) as applied to claims 1, 12-13, 17-18, 20, 22, 25, 29 above, and further in view of Kinzel (U.S. 6624760).

Rothfuss and Boldt disclose the device/ method as stated above.

They do not explicitly teach the limitations of claims 2-3, 7, 11, 19-23.

Kinzel discloses in Figs. 1-2 a device comprising two or more status sensors (could be thermal sensors, col. 4, line 20) 13 comprising transceivers 27 enable them two-way RF communication with host. The sensors have housing, power supply (battery), and transceiver in the housing, as shown in Fig. 2.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device, disclosed by Rothfuss and Boldt, so as to have wireless/ RF communication link with sensors (first and second) comprising transceivers, as taught by Kinzel, so as to enable the device to communicate data to a

remotely located operators and to receive commands from the operator, as it is very well known in the art.

10. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rothfuss and Boldt (U.S. 5723847) as applied to claims 1, 12-13, 17-18, 20, 22, 25, 29 above, and further in view of Clark et al. (U.S. 4850717) [hereinafter Clark].

Rothfuss and Boldt disclose the device/ method as stated above.

They do not explicitly teach a sleeve for the housing, as stated in claim 8.

Clark discloses a device in the field of applicant's endeavor wherein a temperature-sensing device is located in the housing, and the housing is over fitted with a protective sleeve to protect the housing from harsh corrosive environment.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Rothfuss and Boldt so as to over fit the housing with a protective sleeve, as taught by Clark, in order to protect it from harsh corrosive environment and such to extend the housing's life.

11. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rothfuss and Boldt as applied to claims 1, 12-13, 17-18, 20, 22, 25, 29 above, and further in view of Wallace, Jr. (U.S. 6349269) [hereinafter Wallace].

Rothfuss and Boldt disclose the device/ method as stated above.

They do not explicitly teach the limitations of claim 26.

Wallace teaches a device/ method for determining a time remaining comprising taking a first temperature measurement by a temperature sensor, taking a second temperature measurements by the (same) temperature sensor, then taking a difference

between (comparing) said two temperature measurements by the temperature sensor. It is inherent, that in this case, one measurement would be first in time and another measurement would be a latter one in time.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device/ method disclosed by Rothfuss and Boldt, so as to take two temperature measurement in time, as taught by Wallace, so as to determine time remaining, in order to minimize the number of sensors, and thus, to simplify the maintenance of the device.

### ***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in the PTO-892 and not mentioned above disclose related devices and methods.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gail Verbitsky whose telephone number is 571/ 272-2253. The examiner can normally be reached on 7:30 to 4:00 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on 571/ 272-2245. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2859

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GKV

*Gail Verbitsky*

*Primary Patent Examiner, TC 2800*



September 11, 2006